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Nachlaß von Prof. N. Malta

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Taraxaca from Kamtchatka chiefly collected by Mr. E. Hultén in the years 1920—1922.

By

H. DAHLSTEDT.

With 9 Figures in the Text.

Communicated April 22nd 1925 by G. LAGERHEIM and C. A. M. LINDMAN.

In the year 1924 I received from Mr. E. HULTÉN for description a small but very interesting collection of Taraxaca, which he had brought together during his scientific journey to Kamtchatka in the years 1920—1922. Having thoroughly examined this collection, I found that it contained 7 distinct new species, 6 of which belong to the group *T. ceratophora* DAHLST. and 1 to the group *T. glabra* DAHLST.

Further on I have recently obtained two forms of Taraxacum from the same country, collected by Mr. P. T. NOVOGRABLENOF of Petropavlovsk. Both these forms, one of which is new to the science, belong to *T. ceratophora*.

Most species of the *Ceratophora* are circumpolar inhabitants of the northern arctic regions. In northeastern Asia species of this group are also met with in the higher mountains and some inhabit eastern Sibiria. In Europe a few species occur in subarctic Norway and in northern Sweden. In Norway one species occurs also as far to the south as in the mountains of Dovre and Filefjeld. In central Europe there is only known one species of this group, detected in Switzerland by HANDEL-MAZZETTI and included by him besides other species of the same group in his collective species *T. ceratophorum*.

To the group *T. glabra* belongs only a single species, which, though differing in some regards, is closely allied to

T. glabrum DC., a subarctic plant and the most widely distributed species of this group.

Besides the above-mentioned collections I have had occasion to examine a small collection of Taraxaca from Kamtchatka, which I have received on loan from the Botanical Museum of the Garden at Leningrad through the kind assistance of Mr. E. HULTÉN.

The species described below are partly kept in the State Museum of Natural History (Naturhistoriska Riksmuseets Botaniska Avdelning) in Stockholm (H. St.) and partly in the Botanical Museum of the Garden at Leningrad (H. L.).

Finally I have to offer my best thanks to Mr. E. HULTÉN for giving me an opportunity of examining his material and to the Director of the Botanical Museum of the Garden at Leningrad for his kindness in lending me the above-mentioned collection.

T. kamtchaticum DAHLST. n. sp. — Fig. 1.

Folia laete viridia lineari-lingulata—lanceolato-lingulata lobis latiusculis brevibus, ± retroflexis—subhamatis, integris, deorsum valde decrescentibus, saepius ± distantibus, obtusis—rotundato-obtusis, lobo terminali ± sagittato, in fol. exterioribus breviore, in fol. interioribus longiore et majore, lobulo apicali ad medium saepius ± constricto in apicem ± rotundato-obtusum protracto, lobulis lateralibus ± rotundato-obtusis, glabra, petiolis angustis sat longis ± purpureis, nervo mediano ± pallido. *Scapi* 1—plures, tenues, glabri, pallidi v. apicem versus ± colorati. *Involucrum* minutum, 5—7 mm. longum, olivaceo-viride, basi ovato-turbinata, saepe sat conspicue decurrente. *Squamae* exteriores paucae, ± adpressae, ± ovato-triangulares v. triangulares, ± acuminatae—obtusae, brevissimae, vix quartam v. tertiam partem interiorum adtingentes, ± conspicue virescenti-marginatae, interiores latiusculae, lineares, obtusae—obtusiusculae. *Calathium* 25—35 mm. diametro, vix radians. *Ligulae* laete luteae, marginales extus stria ± conspicua, superne evanescente, canoviolacea notatae; ligularum dentes breves ± colorati v. obscuri. *Antherae* polliniferae. *Stylus* sat obscurus. *Achenium* ± castaneo-rubescens, c. 3 mm. longum, vix 1 mm. latum v. angustius, breve tuberculatum v. vulgo pro maxima parte laeve, in pyramiden brevem—brevissimam conicam sensim abiens. *Rostrum* c. 7 mm. longum. *Pappus* albus.

Distribution: Ad flumen Ozernaja, 1908 (E. BEZAIS n. 8) H. L. — Ad pag. Golygina 8. 8. 1921 (E. HULTÉN, Sv. Kamtch. Exp., 1920—1922, n. 2748) H. St. — Inter flumen Opala et Savan (Topik) 28. 7. 1921 (E. HULTÉN, Sv. Kamtch. Exp., n. 2467)

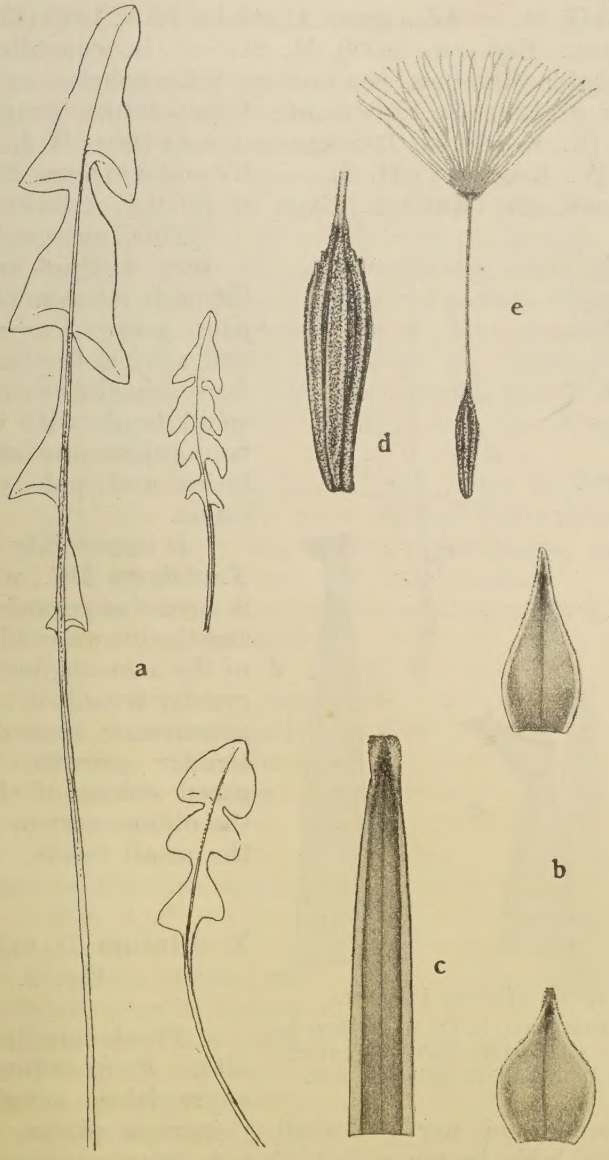

Fig. 1. *T. kamtchaticum* DAHLST.

a. Folia e variis speciminibus × 1; b. Squamae involucri exteriores × 4; c. Squama inv. interior × 4; d. Achenium × 10; e. Achenium cum rostro et pappo × 4.

H. St. — Ad lacum Tolmatjovaja (E. HULTÉN, Sv. Kamtch. Exp., n. 3894) H. St. — Bolscheredsk meridiem versus a flumine 13. 7. 1921 et 13. 6. 1922 (E. HULTÉN, Sv. Kamtch. Exp., n. 2124

et n. 3794) H. St. — Ad pagum Apatscha 19. 6. 1922 (E. HULTÉN, Sv. Kamtch. Exp., n. 3819) H. St. — In convalle fluminis Bannaja inter flumines confluentes Schvoschevoj et Schalsan (RUBINSKI n. 120). — In monte Schapotchka prope pagum Natchika (V. KOMAROV, Iter kamczaticum 1908) H. L. — Petropavlovsk (V. KOMAROV) H. L. — Kronotski-Osero 22. 9. 1921 (R. MALAISE, Sv. Kamtch. Exp., n. 3610 a et 3610 b) H. St.

This nice species gets a very distinct appearance through its slender growth, pale green leaves, obtuse and against the base hastily decreasing lobes, exceedingly small heads with very short triangular-ovate outer phyllaries and pale yellow corollae.

It is certainly related to *T. glabrum* DC., with which it agrees as regards the form and the brown-reddish colour of the achenes, but it differs greatly from it in its general appearance caused by the slender growth, the pale green colour of the leaves, the obtuse narrow lobes and the small heads.

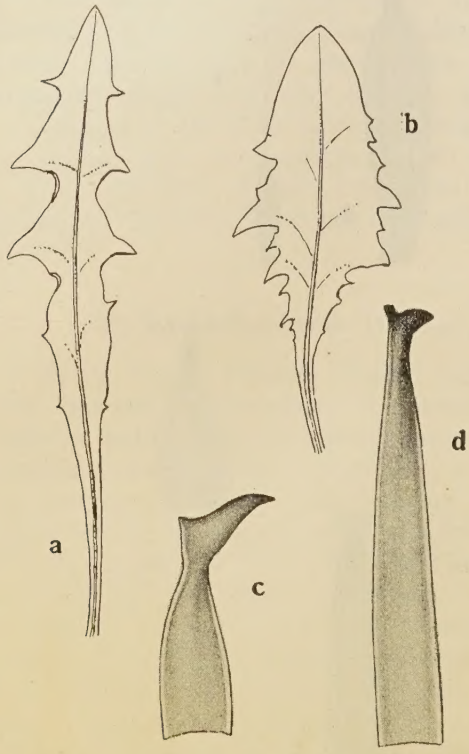

Fig. 2. *T. dilutum* DAHLST.
a. Folium externum × 1; b. Folium internum × 1; c. Squama involucri exterior × 4; d. Squama inv. interior × 4.

T. dilutum DAHLST. n. sp. Fig. 2.

Planta humilis 5—8 cm. alta. *Folia* dilute viridia, supraglabra - subglabra, subtus praesertim in nervo dorsali ± sparsim pilosa, exteriora ± lineares, lobis brevibus deltoideis v. triangularibus ± retroversis-patentibus loboque terminale brevi v. parum elongato parvo acuto praedita, interiora v. omnia magis lanceolata — oblonga, ± integra, dentibus, brevibus, rarius longioribus, ± patentibus—retroversis instructa, obtusa—acutiuscula, petiolis ± alatis, pallidis nervoque mediano pallido v. inferne saepe paullulum colorato. *Scapi* vulgo plures, breves, pallidi, passim saepe aranenoso-pilosi. *Involucrum* 8—9 mm. longum, crassiusculum, basi ovato-rotundata, virescens. *Squamae* exteriores

± erectae—subadpressae, lineari-lanceolatae v. anguste lanceolatae, ± acuminatae, infimae praesertim ± denticulatae, ± anguste sed conspicue albido-marginatae et saepe passim in marginibus apiceque ± violascentes, infimae sub apice ± callosae — breviter cornutae, superiores sub apice cornubus 1—2 mm. longis, sat patentibus—subporrectis, ± coloratis praeditae, interiores lineares, sub apice cornubus parvis, angustis 0,5 mm. longis, ± obscuris instructae. *Calathium* c. 30 mm. diametro, subradians. *Ligulae* laete luteae, marginales extus stria pallide violascente ornatae. *Antherae* polline carentes. *Stylus* luteus. *Stigmata* leviter fusco-virescentia. *Achenium* ignotum.

Distribution: Ad flumen Paratunka pr. Nikolajewsk 11. 7. 1908 (Exped. Explor. Th. P. Riabouchinsky, leg. V. Komarov) H. L. — Klutschi 18. 5. 1921 (R. Malaise, Sv. Kamtch. exp. 1920—1922, n. 3358).

The inferior outer phyllaries are more or less gibbous below the apex, the superior ones are, on the contrary, often provided with very long and narrow appendages, which, like the apex of the phyllaries, are purplish-coloured.

The inner phyllaries have smaller and narrower appendages which like the apex are dark purple-coloured.

The corollae are very pale yellow, the outer ones very faintly striped underneath. Sometimes the stripe is entirely lacking.

T. leptoceras Dahlst. n. sp.
Fig. 3.

Folia sat laete viridia, glabra—subglabra, anguste lineari-lanceolata, lobis brevibus angustis patentibus v. ± retroflexis, interlobiis ± angustis et ± atropurpureis sejunctis, lobo terminali parvo triangulari — triangulari-hastato acuto, interiora latiora, lineari-lanceolata, lobulis et dentibus brevibus acutis praedita, lobo terminali latiusculo, sat longo ± ovato-sagittato, ± integro acuto, omnia saepius in pagina superiore valde atropurpureo-maculata, petiolis nervo-

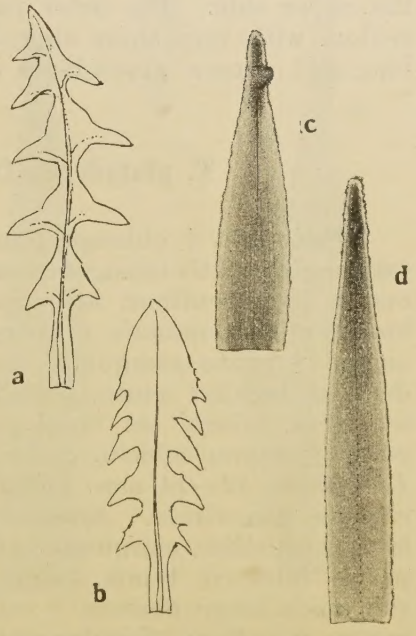

Fig. 3. *T. leptoceras* Dahlst.
a. Folium externum × 1; b. Folium internum × 1; c. Squama exterior involucri × 4; d. Squama interior involucri × 4.

que mediano ± roseo-coloratis. *Scapi* humiles, ± pilosi, praesertim sub involucro. *Involucrum* ± virescens, 13—14 mm. longum, crassiusculum, basi ± ovata. *Squamae* exteriores laxe adpressae, ± anguste lanceolatae, mediocriter longae, marginibus ± albidae, superne ± fusco-violascentes, sub apice ± callosae v. praesertim superiores ± corniculatae, interiores latiusculae, sublineares, apicem versus ± atrovirides, sub apice callosae v. brevissime corniculatae. *Calathium* c. 40 mm. diametro, sat radians. *Ligulae* sat laete luteae, marginales extus stria ± conspicua, cano-violacea notatae. *Antherae* polliniferae. *Stylus* cum stigm. subobscurus. *Achenium* ignotum.

Distribution: Petropavlovsk 1. 6. 1921 (E. Hultén, Sv. Kamtch. Exp. 1920—22, n. 1610) H. St. — Ibidem 1908 (V. Komarov) H. L.

T. leptoceras is slightly reminiscent of *T. dilutum* especially in its small growth, but differs from it by its darker green leaves, narrower and more acute lobes, very narrow and long, commonly purple-spotted interspaces between the lobes and very purple petioles and mid-ribs.

The leaves are very often more or less purple-spotted on the upper side. The outer phyllaries are only gibbous or more seldom with very short appendages below the apex, not with long and narrow appendages as in *T. dilutum*.

T. platyceras Dahlst. — Fig. 4.

Folia lata ± oblonga, tenuia, ± glabra, crebre lobata, lobis sat longis et latis triangularibus — deltoideis, ± patentibus, deorsum decrescentibus, in superiore v. in utraque margine dentibus acutis latiusculis ± porrectis praedita, lobo terminali sat magno ± ovato-triangulari—ovato-sagittato, subintegro — late dentato, breviter acuto, petiolis subangustis, subalatis, ± violascentibus. *Scapi* sat longi pallidi, inferne ± violascentes, superne ± cupreo-coloriti, glabri, sub involucro ± araneoso-pilosi. *Involucrum* 12—14 mm. longum, latum basi ± ovato-rotundata, obscure atro-viride. *Squamae* exteriores ± late ovato-lanceolatae, ± pallide marginatae et violascentes, sub apice cornubus parvis latis vix 1 mm. longis praeditae, interiores ± lineares, sub apice longo obscuro ± callosæ. *Calathium* c. 50 mm. diametro, ± radians. *Ligulae* sublaete luteae, marginales extus stria cano-violacea, superne saepe ± evanescente notatae. *Antherae* polliniferae. *Stylus* longe excedens, obscurus. *Achenium* fusco-olivaceum, c. 4 mm. longum, 1 mm. latum, superne breviter spinulosum, caeterum usque ad basin ± tuberculatum, in pyramiden

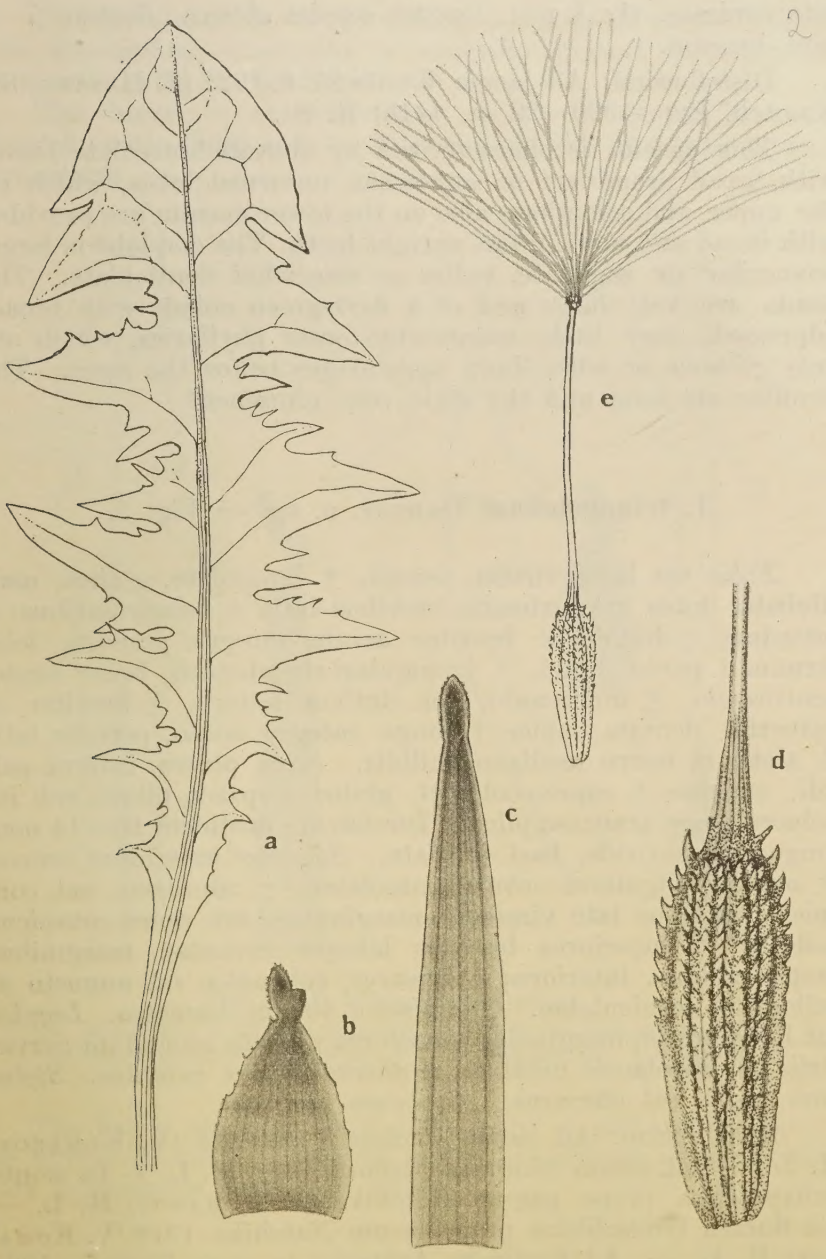

Fig. 4. *T. platyceras* DAHLST.

a. Folium intermedium × 1; b. Squama involucri exterior × 4; c. Squama inv. interior × 4; d. Achenium × 10; e. Achenium cum rostro et pappo × 4.

late conicam, vix 1 mm. longam sensim abiens. *Rostrum* 7—8 mm. longum.

Distribution: Ad lacum Kurile 27. 8. 1922 (E. HULTÉN, Sv. Kamtch. Exp. 1920—22, n. 4418) H. St.

This species is characterized by obovate-lanceolate leaves with broad prominent or somewhat upturned lobes, which on the upper and sometimes also on the lower margin are provided with broad and more or less upright teeth. The end-lobe is large, triangular or sagittate, entire or somewhat denticulate. The heads are very large and of a dark-green colour with broad, adpressed, very little marginated outer phyllaries, which are only gibbous or with short appendages below the apex. The corollae are long and the style very prominent.

T. trigonolobum DAHLST. n. sp. — Fig. 5.

Folia sat laete viridia, tenuia, ± lanceolata, glabra, multilobata, lobis approximatis brevibus latis ± triangularibus v. interdum ± deltoideis, breviter acutis, integris praedita, lobo terminali parvo, brevi, ± triangulari-rhomboideo, breve acuto-acutiusculo, ± mucronato, fol. intima latiora, ± breviter et patentim dentata, apice ± longo integro acuto, petiolis latis ± alatis et nervo mediano pallidis. *Scapi* plures, inferne pallidi, superne ± cupreo-colorati, glabri v. parce pilosi, sub involucro longe araneoso-pilosi. *Involucrum* mediocre 10—14 mm. longum, atroviride, basi ± ovata. *Squamae* exteriores breves, ± ovato-triangulares—ovato-lanceolatae, ± adpressae, sat conspicue et saepe late virescenti-marginatae, sub apice conspicue callosae v. superiores breviter lateque cornutae, marginibus saepe ciliatae, interiores ± lineares, sub apice sat angusto ± callosae v. corniculatae. *Calathium* c. 40 mm. diametro. *Ligulae* sat laete luteae, marginales concolores v. extus secundum nervos striis cano-violaceis notatae. *Antherae* polline carentes. *Stylus* cum stigm. sat obscurus. *Achenium* ignotum.

Distribution: Ad lacum Blichne Paratunka (V. KOMAROV) H. L. — Ad sinum Mutnaja (RIEDER 1831) H. L. — In monte Schapotchka prope pagum Natchika (V. KOMAROV) H. L. — Ad flumen Greischkina prope lacum Natchika 1918 (V. KOMAROV) H. L. — Ad fluminem Avatscha in pago Korjaka 1908 (V. KOMAROV) H. L. — Ad montem eruptivum Avatscha 675 m. s. m. 30. 7. 1920 (E. HULTÉN, Sv. Kamtch. Exp. 1920—22, n. 610) H. St. — Ad montem Krasheninnikov ad lacum Kronoki (V. KOMAROV 1918) H. L.

T. trigonolobum is chiefly distinguished by its narrow leaves with approached, triangular or somewhat deltoid lobes and its small triangular or rhomboid end-lobes.

The inner — or sometimes all — leaves are broader, lingulate with short and broad recurved teeth and in the upper part entire.

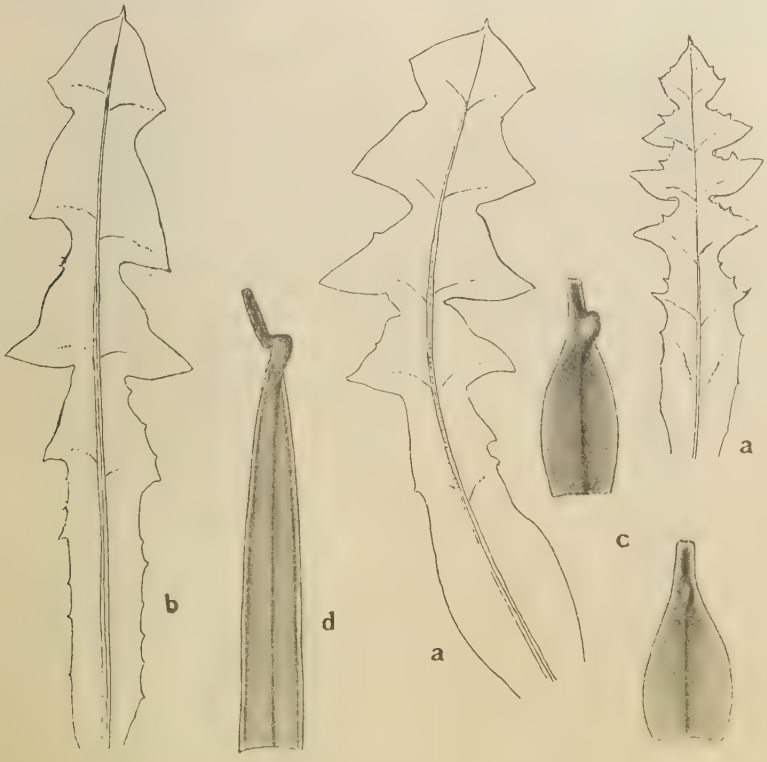

Fig. 5. *T. trigonolobum* DAHLST.
a. Folia intermedia e duobus speciminibus × 1; b. Folium interius × 1; c. Squamae involucri exteriores × 4; d. Squama inv. interior × 4.

The heads are very short with more or less ovate-lanceolate adpressed outer phyllaries, which are gibbous or with only short appendages below the apex.

T. latisquameum DAHLST. n. sp. — Fig. 6.

Folia lineari-lanceolata—spatulato-lingulata, lobis brevibus — mediocriter longis, triangularibus — deltoideis, ± approximatis v. interlobiis latis sejunctis, edentatis v. parce den-

tatis, lobo terminali parvo — mediocri, triangulari minore — sagittato majore, acuto, intima latiora lanceolata, dentibus retroversis v. lobulis ± angustis praedita, apice majore subintegro v. ± dentato. *Scapi* ± colorati, sparsim v. sub involucro densiuscule araneoso-pilosi. *Involucrum* mediore, sat latum, c. 12—13 mm. longum, basi ± truncata, atroviride. *Squamae*

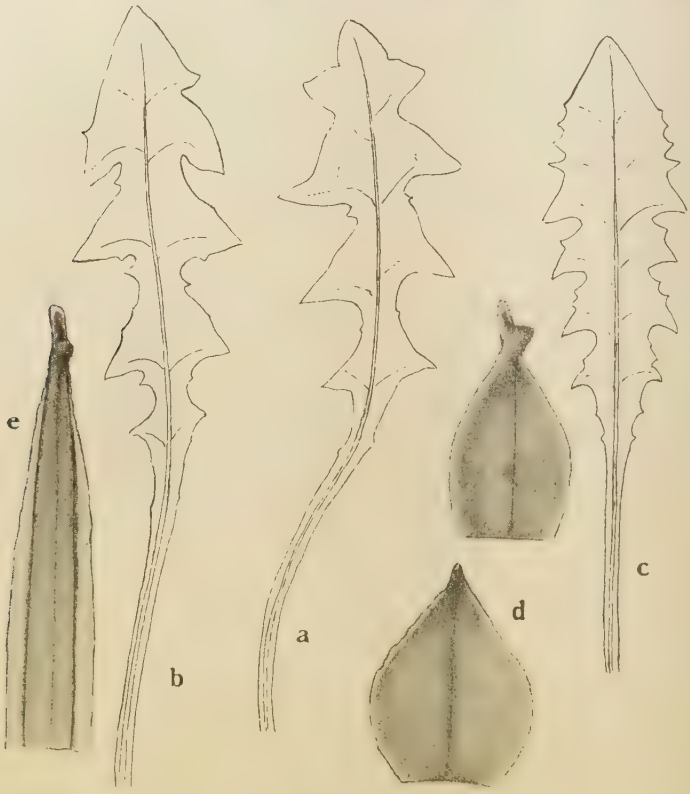

Fig. 6. *T. latisquameum* DAHLST.
a. Folium externum × 1; b. Folium intermedium × 1; c. Folium internum × 1; d. Squamae involucri exteriores × 4; e. Squama invol. interior × 4.

exteriores latissimae, ± late ovatae, anguste albido-marginatae, ± acuminatae, adpressae, sub apice ± callosae v. plurimae breve cornutae, interiores latiusculae sublineares sub apice ± callosae v. corniculatae. *Calathium* 35—45(—50) mm. diametro, parum radians. *Ligulae* luteae, ± canaliculatae, marginales extus stria rubro-violacea conspicue notatae. *Antherae* pollĭne carentes. *Stylus* cum stigm. sat obscurus. *Achenium* ignotum.

Distribution: In monte eruptivo Mutnowskaja, 1,400 m. s. m. 29. 7. 1922 (E. HULTÉN, Sv. Kamtch. Exp. 1920—22, n. 4054)

H. St. — Malka sub Salice macrolepide in litore arenoso fluminis Bystraja, 29. 7. 1924 (P. T. NOVOGRABLENOF) H. St.

This species is reminiscent in its general appearance somewhat of *T. trigonolobum*, from which it is very well distinguished by far broader outer phyllaries and more deeply incised leaves with narrower lobes.

T. Hultenii DAHLST. n. sp. — Fig. 7.

Folia longa, anguste oblongo—lanceolata, tenuia, sat laete viridia, glabra v. subtus in nervo mediano ± pilosa, longe petiolata, petiolis angustis et majore v. minore parte nervi mediani violascentibus, densiuscule—sparsim lobata, lobis longis magis approximatis v. brevibus subangustis, patentibus — subporrigentibus, inferioribus saepius retroversis, subhamatis, ± acutis, in margine superiore et in interlobiis, plerumque latis, dentibus brevibus v. sat longis, latiusculis—angustis, saepe ± porrigentibus instructis, lobo terminali ± elongato, triangulari—hastato, rarius sagittato, acuto, lobulis lateralibus plerumque patentibus usque subporrectis v. interdum retroversis, acutis. *Scapi* folia aequantes v. iis longiores, ± pallidi v. superne ± colorati, glabri — passim araneoso-pilosi. *Involucrum* c. 16—17 mm. longum, olivaceo-viride, inferne ± variegatum, basi ± ovata. *Squamae* exteriores latae, ± ovatae et adpressae, in margine ± albido-marginatae, saepe ± violascentes, sub apice cornubus sat longis et validis, 2—4 mm. longis et ± patentibus instructae, interiores lineares, sub apice cornubus obtusis—obtusiusculis; parvis, 1—1,5 mm. longis praeditae, omnes apice ipso ± violascentes. *Calathium* 35—40 mm. diametro, sat obscure luteum. *Ligulae* marginales extus stria lata et conspicue cano-violacea notatae. *Antherae* ut videtur parce polliniferae. *Stylus* subobscurus, brevis, inter antheras ± inclusus. *Achenium* fusco-stramineum, c. 4 mm. longum, 1 mm. latum, apice acute et longe spinulosum, caeterum ± tuberculatum, ad basin fere laeve, in pyramiden 1 mm. longam v. paullo longiorem anguste conicam, basi bispinulosam sensim abiens. *Rostrum* 10 mm. longum.

Distribution: Savoiko (E. HULTÉN, Sv. Kamtch. Exp. n. 266 et 355 a) H. St.

T. Hultenii is characterized by more or less ovato-lanceolate leaves, with irregularly sometimes out- sometimes down- or upturned lobes, which on each margin are provided with a few coarse teeth.

As to the heads it is in some degree reminiscent of *T. Hjeltii* DAHLST. but the outer phyllaries are broader, scarcely or not at all white-edged and the appendages are not seldom longer,

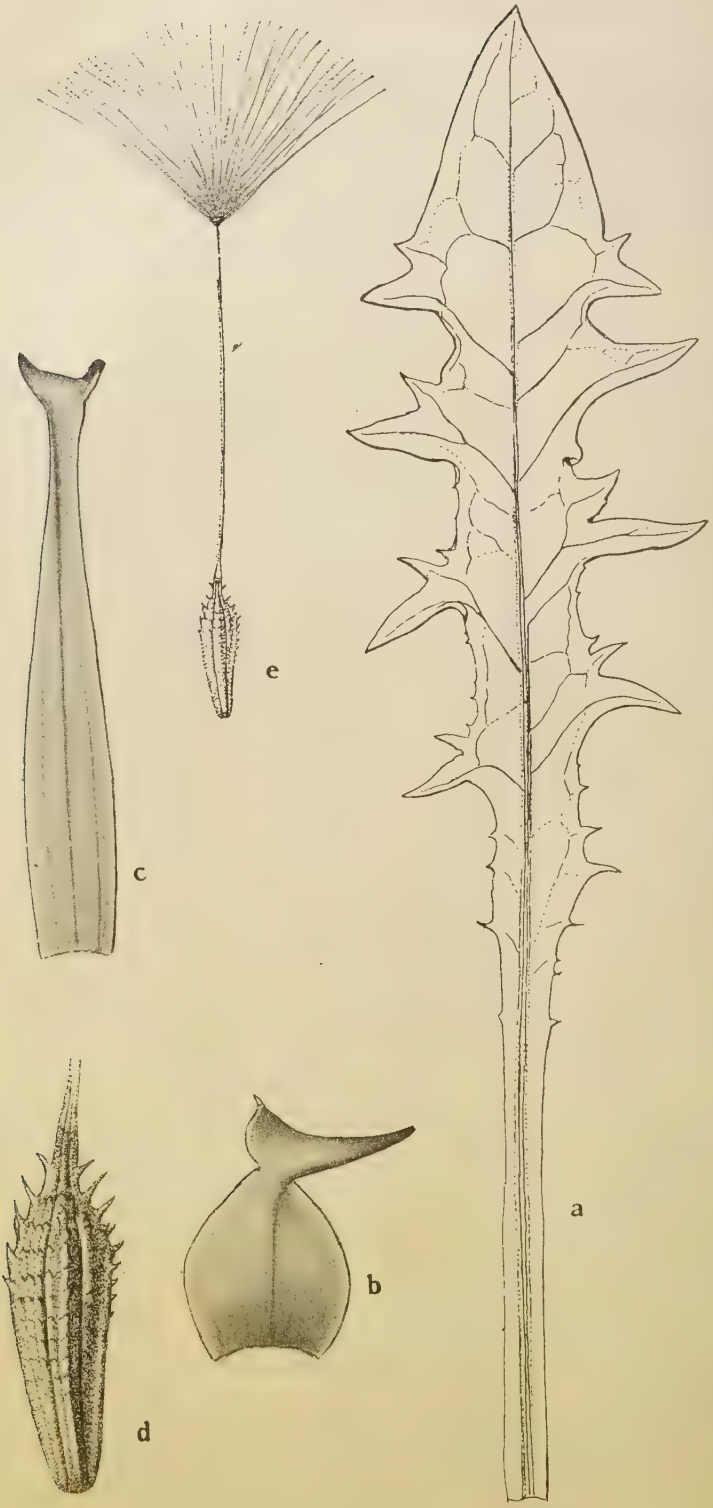

Fig. 7. *T. Hultenii* DAHLST.

a. Folium intermedium × 1; b. Squama exterior involucri × 4; c. Squama interior inv. × 4; d. Achenium × 10; e. Achenium cum rostro et pappo × 4.

often exceedingly long. The marginal ligulae have a greyish violet-coloured stripe beneath.

A peculiarity of this species is that the faint styles are included in the subcanaliculate corollae or scarcely prominent.

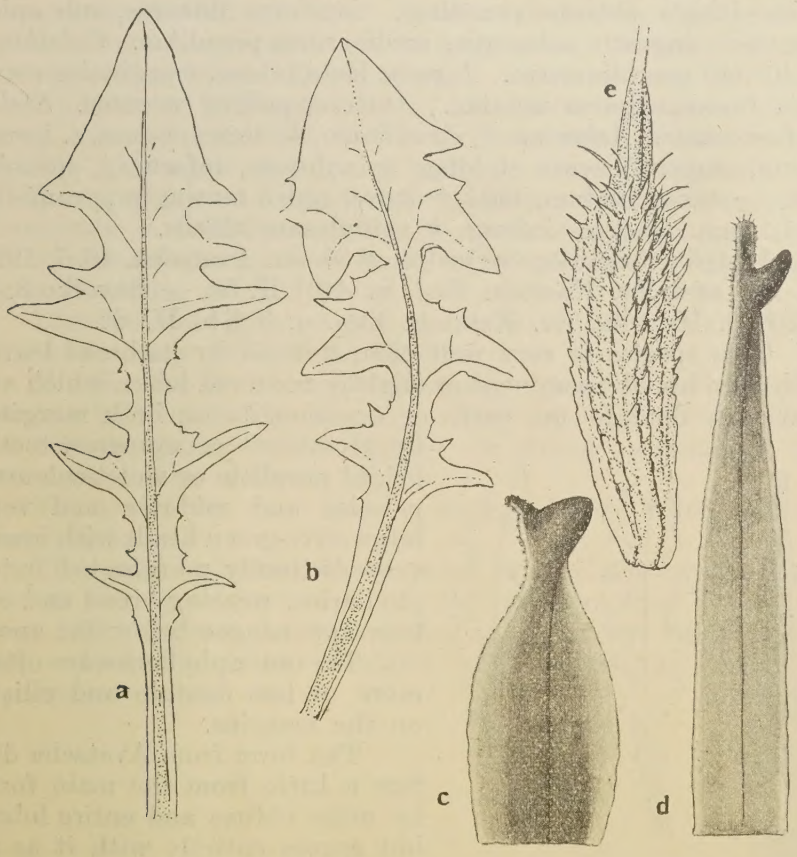

Fig. 8. *T. perlatescens* DAHLST.
a. Folium intermedium × 1; b. Folium interius × 1; c. Squama exterior involucri × 4; d. Squama inv. interior × 4; e. Achenium × 10.

T. perlatescens DAHLST. n. sp. — Fig. 8.

Folia ± obovata—obovato-lanceolata, paucilobata, lobis superioribus sat longis et latis, patentibus — leviter recurvatis, in margine superiore ± dentatis, saepe resupinatis, interlobiis brevibus — mediocriter longis, integris v. ± dentatis, lobo terminali sat magno et lato, hastato-sagittato, integro v. inferne ± dentato, petiolis et nervo mediano rubro-violaceis. *Scapi* folia aequantes v. ± superantes, basi apiceque ± colorati, gla-

bri — sparsim sub involucro ± crebre araneoso-pilosi. *Involucrum* magnum, crassum ± olivaceo-viride, basi ± truncata. *Squamae* exteriores ± ovato-lanceolatae, sat longae, late albo-marginatae, sub apice ± colorato cornubus ± brevibus — mediocriter longis obtusis praeditae, interiores lineares, sub apice cornubus angustis subacutis, mediocribus praeditae. *Calathium* c. 40—45 mm. diametro. *Ligulae* laete luteae, marginales extus stria fusco-purpurea notatae. *Antherae* polline carentes. *Stylus* ± fuscescens. *Achenium* ± straminum, 4,5 mm. longum, c. 1 mm. latum, superne acute et longe spinulosum, inferne ± spinulosum — tuberculatum, basi ± laeve, apice sensim in pyramiden c. 1,5 mm. longam, inferne ± spinulosam abiens.

Distribution: Bogatyrjovka ad sinum Avatscha, 16. 7. 1920 (E. Hultén, Sv. Kamtch. Exp. n. 443) H. St. — Savoiko 3. 7. 1920 (E. Hultén, Sv. Kamtch. Exp. n. 355 b) H. St.

This species is very well characterized by its broad leaves with few broad prominent or slightly recurved lobes, which are sparingly dentate on each or occasionally on both margins, by prominent or upturned teeth, bright purplish- or violet-coloured petioles and mid-ribs and very large olive-green heads with broad very distinctly marginated outer phyllaries, wearing broad and obtuse appendages below the apex.

The outer phyllaries are often more or less dentate and ciliate on the margins.

The form from Avatscha differs a little from the main form by more obtuse and entire lobes, but agrees entirely with it as to the large heads and the broadly marginated obtusely appendaged outer phyllaries.

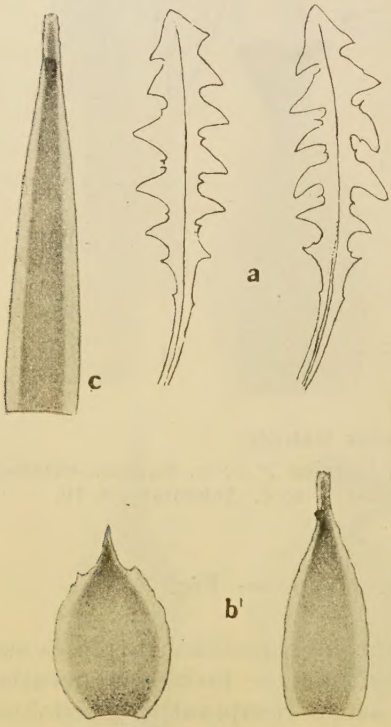

Fig 9. *T. albescens* Dahlst.
a. Folia × 1; b. Squama involucri exteriores × 4; c. Squama inv. interior × 4.

T. albescens Dahlst. n. sp.
Fig. 9.

Folia subglabra, sat obscure viridia, angusta, linearia, multilobata, lobis approximatis, brevibus, deltoideis v. triangularibus, subrecurvis v. patentibus, haud latis praedita, lobo terminali parvo

triangulari v. rhomboideo, petiolis latis, pallidis v. superne ± coloratis, nervo mediano ± colorato. *Scapi* folia aequantes v. iis breviores, juniores valde araneoso-pilosi, ± cupreo—v. violascenti-colorati. *Involucrum* parvum c. 12 mm. longum, olivaceo-viride, basi ± ovata. *Squamae* exteriores ± adpressae, ovatae—ovato-lanceolatae, albido-marginatae, superne saepius ± violascentes, acuminatae, acumine ± acuto violaceo, sub apice ecorniculatae v. levissime callosae, superiores saepius corniculo parvo colorato praeditae, interiores latiusculae, e basi latiore lineares, sub apice colorato ± callosae (rarius corniculatae). *Calathium* c. 35 mm. diametro, sat radians. *Ligulae* marginales albescentes v. levissime sulphureae, interiores magis magisque sulphurescentes, antheris obscure luteis. *Antherae* polliniferae. *Stylus* obscurus, validus, excedens. *Achenium* ignotum.

Distribution: In cacumine montis Ganalski Vostraki (P. T. Novograblenof 18. 7. 1924) H. St.

T. albescens is a very noteworthy species. It is chiefly characterized by its almost white or very pale sulphureous outer and slightly darker inner ligulae, in strong contrast to the very dark yellow anthers.

The leaves are very narrow, very regularly lobed and the lobes short.

The outer phyllaries are more or less white-marginated and on the upper part more or less violet-coloured. Most of them lack appendages below the apex, except the superior ones, which are often provided with very short coloured appendages.

Tryckt den 4 november 1925.

Uppsala 1925. Almqvist & Wiksells Boktryckeri-A.-B.